## Remarks

The present invention provides expression systems that comprise novel nuclear receptors in combination with a gene of interest operably linked to at least one SXR response element. These invention systems can be used in various embodiments for the production of a target protein expressed by this gene of interest. In a preferred embodiment, the expression system comprises the steroid and xenobiotic receptor (SXR), a broad-specificity sensing receptor that is a novel branch of the nuclear receptor superfamily. SXR forms a heterodimer with RXR that can bind to and induce transcription from SXR response elements in response to various xenobiotic compounds.

Claims 1-26 were pending before this communication. By the present communication, claims 1, 6, 11, 16, 21 and 24 have been amended to define Applicants' invention with greater particularity. These amendments add no new matter and are fully supported by the specification and the original claims. In addition, claims 4 and 5 have been amended to correct inadvertent typographical errors.

Claims 1-26 remain currently pending. Claims 3, 8, 13, 18, 23 and 26 have been withdrawn by the Examiner in response to Applicants' election of Group I claims with traverse. Accordingly, claims 1, 2, 4-7, 9-12, 14-17, 19-22, 24 and 25 are currently under consideration.

With respect to the Examiner's request for correction of the specification pursuant to Applicants' submission of the Sequence Listing, Applicants respectfully submit that the application is in compliance with all provisions of 37 C.F.R. §§ 1.821-1.825. Specifically, the specification has been previously amended to insert sequence identifiers. First, in an amendment mailed on April 19, 2002, the specification was amended to replace pages 13, 15, 17, 59, 60, 62 and 63 to incorporate respective SEQ ID NOs. Subsequently, the specification was further amended on June 25, 2003 in connection with the submission of the corrected sequence listing. Accordingly, Applicants respectfully request clarification that both of these amendments were entered to conform the specification to the corrected Sequence Listing mailed on June 25, 2003.

The rejection of claims 1, 2, 4-7, 9-12, 14-17, 19-22, 24 and 25 under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention, is respectfully traversed. Contrary to the Examiner's assertion that the specification fails to disclose the properties of an SXR protein (see Office Action, Paper No. 21, at page 8, lines 10-12), the specification provides both structural and functional requirements for a nuclear receptor, including an SXR protein.

Applicants respectfully submit that the required elements of the pending claims are fully characterized by reference to a combination of structural and functional features. Specifically, the nuclear receptor is defined structurally as a member of the well-defined steroid/thyroid hormone superfamily. The sequence homologies of the claimed nuclear receptor with other members of the steroid/thyroid hormone superfamily are detailed in the specification, with reference to specific conserved regions (see, for example, specification at pages 23-24, paragraphs [0059]-[0063]). The nuclear receptor is also defined functionally as responding to xenobiotic compounds and binding to an SXR response element as a heterodimer with retinoid X receptor (RXR) to activate transcription of a nucleic acid containing an SXR response element (see, for example, specification at page 9, paragraph [0018]). In addition, the nucleotide sequences of exemplary SXR response elements are also detailed in the specification (see, for example, specification at pages 25-27, paragraphs [0064]-[0068]), and explicitly recited in the claims.

However, in order to expedite prosecution and reduce the issues, claims 1, 6, 11, 16, 21 and 24 have been amended to further define both the nuclear receptor and the SXR response element. Applicants respectfully submit that the claim language, as amended, parallels the claim language of allowed claims in co-pending U.S. Application No. 09/005,286.

Therefore, the subject matter of the present claims is fully described in the specification and in the claims themselves. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection of claims 1, 2, 4-7, 9-12, 14-17, 19-22, 24 and 25 under 35 U.S.C. § 112, first paragraph.

The provisional rejection of claims 1, 2, 3-7, 9-12, 14-17, 19-22, 24 and 25, under the judicially created doctrine of obvious-type double patenting over claims 60-67 and 70-72 of co-pending U.S. Application No. 09/005,286, is respectfully traversed. Applicants respectfully submit that the present claims are clearly patentably distinct from claims 60-67 and 70-72 of the co-pending application.

Specifically, the present claims are directed to expression systems for the expression of a gene of interest, and methods of using such systems for the production of a target protein encoded by a gene of interest. Invention expression systems comprise at least two different components: (i) an SXR response element operably linked to at least one gene; and (ii) a nuclear receptor which binds to this SXR response element as a heterodimer with RXR. In contrast, claims 60-67 of the co-pending application are directed to isolated nucleic acid constructs comprising a polynucleotide encoding a receptor polypeptide (*e.g.*, SXR) for the expression of that same polypeptide, with no other components present. Claims 70-72 are directed to isolated polynucleotides encoding a human SXR, with no other components present. Applicants respectfully disagree with the Examiner's assertion that claims 70-72 are directed to expression vectors for SXR (see Office Action, Paper No. 21, at page 11, lines 8-9). Therefore, the present claims are not claiming common subject matter with either claims 60-67 or claims 70-72 of the co-pending application, because the present claims are neither directed solely to nucleic acid constructs for the expression of receptor polypeptides, nor solely to receptor polynucleotides encoding a human SXR.

Moreover, the presently claimed subject matter would not be covered by any patent granted on the co-pending application. In fact, the present claims would be subject to restriction as distinct inventions from claims directed to nucleic acid constructs for the expression of receptor polypeptides, or to isolated human SXR polynucleotides. Accordingly, Applicants respectfully request reconsideration and withdrawal of this provisional rejection of claims 1, 2, 3-7, 9-12, 14-17, 19-22, 24 and 25, under the doctrine of double patenting.

**Conclusion**

In view of the above amendments and remarks, prompt and favorable action on all claims is respectfully requested. In the event any matters remain to be resolved in view of this communication, the Examiner is encouraged to call the undersigned so that a prompt disposition of this application can be achieved.

Respectfully submitted,

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